

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (currently amended) A fuel cell system, comprising:
 - (a) a fuel cell comprising an anode input for a hydrogen-containing anode supply stream, a cathode input for an oxidant-containing cathode supply stream, an anode effluent output, and a cathode output for cathode effluent comprising water produced by said fuel cell;
 - (b) a water transfer device, comprising:
 - (i) a device cathode effluent input connected to said cathode output;
 - (ii) a device supply stream connected to either or both of said fuel cell inputs;
and
 - (iii) ~~a water transfer membrane~~ a plurality of conduits each having an inner void and outer surface, the walls of which comprise a water transfer membrane material, wherein one end of said conduit is connected to said cathode output, and the other end of said conduit is connected to said device supply stream output so as to allow for the flow of said cathode effluent through said inner void, and wherein said conduits are connected to a plenum; and
 - (iv) a housing which encloses and provides a void space around at least a portion of the outer surface of said conduit, wherein said housing has an inlet for said device supply stream an outlet for said device supply stream allowing for the flow of said device supply stream through said void space; wherein a gas from

said device supply stream flowing through the void space of said housing passes over an outer surface of said conduit, but does not substantially mix with said cathode effluent flowing through the inner void of said conduit;

wherein said water transfer device transfers water from said cathode effluent to either or both of said supply streams, and wherein the temperature of said cathode effluent at said device cathode effluent input is not significantly greater than the temperature of said cathode effluent at said cathode output; and said temperature at said device input being sufficient to maintain water in ~~[[its]]~~ a vapor state and being greater than ~~its dew point~~ and up to about 10 °C above ~~its~~ the dew point of water.

2. (original) A fuel cell system according to Claim 1, wherein said water transfer membrane comprises poly acid.
3. (original) A fuel cell system according to Claim 1, wherein said anode supply stream comprises reformat from a hydrocarbon fuel processor.
4. (original) A fuel cell system according to Claim 3, wherein said hydrocarbon fuel processor comprises an autothermal reformer.
5. (original) A fuel cell system according to Claim 1, wherein said water transfer device transfers water to said cathode supply stream.
6. (currently amended) A fuel cell system, comprising:

- (a) a fuel cell comprising an anode input for a hydrogen-containing anode supply stream, a cathode input for an air supply stream, an anode output for anode effluent comprising water produced by said fuel cell; and a cathode output for cathode effluent comprising water produced by said fuel cell;
- (b) a compressor having an input for an air stream and an output connected to said cathode input of the fuel cell stack; and
- (c) a water transfer device, comprising:
 - (i) a device cathode effluent input connected to said cathode output,
 - (ii) a device supply stream output connected to either or both of said fuel cell inputs,
 - (iii) a plurality of conduits each having an inner void and outer surface, the walls of which comprise a water transfer membrane material, wherein one end of said conduit is connected to said cathode output, and the other end of said conduit is connected to said device supply stream output so as to allow for the flow of said cathode effluent through said inner void, and wherein said conduits are connected to a plenum; and
 - (iv) a housing which encloses and provides a void space around at least a portion of the outer surface of said conduit, wherein said housing has an inlet for said device supply stream an outlet for said device supply stream allowing for the flow of the device supply stream through said void space; wherein a gas from said device supply stream flowing through the void space of said housing passes over an outer surface of said conduit, but does not substantially mix with the cathode effluent flowing through the inner void of said conduit;

wherein said water transfer device transfers water from said cathode effluent to either or both of said supply streams, and wherein said cathode effluent has a temperature at said device input, said temperature being sufficient to maintain water in ~~[[its]]~~ a vapor state and being greater than ~~its dew point~~ and up to about 10 °C above ~~its~~ the dew point of water.

7. (original) A fuel cell system according to Claim 6, wherein said water transfer membrane comprises poly[perfluorosulfonic] acid.

8. (original) A fuel cell system according to Claim 6, wherein said anode supply stream comprises reformat produced by a hydrocarbon fuel processor.

9. (original) A fuel cell system according to Claim 8, wherein said hydrocarbon fuel processor comprises an autothermal reformer.

10-20. (cancelled)